

ABSTRACT OF THE DISCLOSURE

A system for cooling a combustion chamber of an engine, such as a rocket engine, is provided. The system has a plurality of coolant tubes or passages surrounding the combustion chamber, a torroidal coolant-collection manifold for receiving coolant from the coolant tubes or passages and for discharging the coolant through a discharge port, and a plurality of turning vanes within the torroidal manifold for reducing pressure loss and improving pressure uniformity associated with the torroidal coolant-collection manifold.